

Appl. No. : 10/758,355  
Filed : January 15, 2004

## REMARKS

The foregoing amendments and the following remarks are responsive to the August 23, 2005 Office Action. Claims 1, 8, 10, and 12 are amended, and Claims 2-9 and 11 remain as originally filed. Thus, Claims 1-12 are presented for further consideration.

### Comments on Amendments to Specification and Claim 8

As described herein, Applicant has amended paragraph [0061] of the specification and Claim 8 to correct two inadvertent typographical errors. Applicant submits that these amendments do not add new matter to the application, and Applicant respectfully requests that the Examiner enter these amendments.

### Response to Rejection of Claims 1-4, 9, and 12 Under 35 U.S.C. § 102(b)

In the August 23, 2005 Office Action, the Examiner rejects 1-4, 9, and 12 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,691,978 issued to Kenworthy.

#### Claim 1

As described herein, Applicant has amended Claim 1 to recite (emphasis added):

1. A transceiver comprising:
  - a receiver receiving a signal and generating **a receiver signal having a receiver bandwidth;**
  - a receiver direct converter translating the receiver signal to a baseband of the receiver signal and digitizing the translated, receiver signal;
  - an adaptive canceller comprising a reference direct converter, the reference direct converter outputting a digitized transmit signal reference of a spectral energy of a transmitter, **the digitized transmit signal reference having the receiver bandwidth;** and
  - a matched filter, wherein the receiver direct converter, the reference direct converter, and the matched filter **suppress the spectral energy of the transmitter from the receiver signal.**

Applicant submits that amended Claim 1 includes limitations which are not disclosed by Kenworthy. For example, Applicant submits that Kenworthy does not disclose a “reference direct converter outputting a digitized transmit signal reference of a spectral energy of a transmitter, the digitized transmit signal reference having *the receiver bandwidth*,” as recited by amended Claim 1. (Emphasis added).

Kenworthy is directed to cancellation of dynamic (non-stationary) coupled transmissions caused by moving reflectors such as vehicles or drifting performance of transceiver components.

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Kenworthy, column 2, lines 26-31. To achieve this cancellation, Kenworthy uses a “digital adaptive baseband canceller,” wherein a digital subtracter subtracts a digitized transmitted signal from a received signal. *Id.* at column 3, lines 47-66. However, Kenworthy does not disclose or suggest that the subtracted signal is filtered in response to the receiver bandwidth so that the subtracted signal has the receiver bandwidth. Therefore, Kenworthy does not disclose or suggest a “reference direct converter outputting a digitized transmit signal reference of a spectral energy of a transmitter, the digitized transmit signal reference having the receiver bandwidth,” as recited by amended Claim 1.

For at least the foregoing reasons, Applicant submits that amended Claim 1 includes limitations which are not disclosed or suggested by Kenworthy. Therefore, Applicant submits that Claim 1 is not anticipated by Kenworthy. Applicant respectfully requests that the Examiner withdraw the rejection of Claim 1 and pass Claim 1 to allowance.

#### **Claims 2-4 and 9**

Each of Claims 2-4 and 9 depends from amended Claim 1. As such, Claims 2-4 and 9 each include all the limitations of amended Claim 1, as well as recite further limitations of particular utility. Applicant submits that each of Claims 2-4 and 9 includes limitations which are not disclosed by Kenworthy. Applicant respectfully requests that the Examiner withdraw the rejections of Claims 2-4 and 9 and pass Claims 2-4 and 9 to allowance.

#### **Claim 12**

As described herein, Applicant has amended Claim 12 to recite (emphasis added):

12. A transceiver comprising:
  - a duplexer coupled to an antenna;
  - a receiver having a receiver bandwidth, wherein the receiver receives a first signal from the duplexer, **the first signal having the receiver bandwidth;**
  - a transmitter sending a second signal to the duplexer, **the second signal having the receiver bandwidth;** and
  - an adaptive, digital, coherent spectral canceller coupled to the receiver and the transmitter, the canceller attenuating a signal spectrum leakage of **the second signal within the receiver bandwidth.**

For reasons similar to those discussed above with respect to amended Claim 1, Applicant submits that amended Claim 12 includes limitations which are not disclosed by Kenworthy. Therefore, Applicant submits that Claim 12 is not anticipated by Kenworthy. Applicant

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respectfully requests that the Examiner withdraw the rejection of Claim 12 and pass Claim 12 to allowance.

**Response to Rejection of Claims 10 and 11 Under 35 U.S.C. § 102(e)**

In the August 23, 2005 Office Action, the Examiner rejects Claims 10 and 11 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,240,128 issued to Banerjea et al. ("Banerjea").

**Claim 10**

As described herein, Applicant has amended Claim 10 to recite (emphasis added):

10. A method of attenuating a transmitter signal spectrum within a bandwidth of a receiver, the method comprising:
- digitizing a received signal from a receiver, **the received signal having a receiver bandwidth**, the received signal corrupted by components of a transmit signal;
  - creating a digitized reference transmit signal of the transmit signal, the digitized reference transmit signal **having the receiver bandwidth**;
  - aligning the digitized reference transmit signal in amplitude, phase and time delay with the digitized received signal;
  - subtracting the digitized reference transmit signal from the digitized received signal to form a residue; and
  - suppressing a transmitter spectral signal power **from the residue within the receiver bandwidth**.

Applicant submits that amended Claim 10 includes limitations which are not disclosed by Banerjea. For example, Applicant submits that Banerjea does not disclose "creating a digitized reference transmit signal of the transmit signal, the digitized reference transmit signal having the receiver bandwidth," as recited by amended Claim 10. Banerjea is directed at enhancing echo cancellations in a data communication modem by utilizing a post equalization echo canceler, and transmitter and receiver data timing synchronization to enhance tracking of the echo path impulse response and convergence of a transversal filter in the post equalization echo canceller. Banerjea, at column 2, lines 54-67. To achieve this, Banerjea uses the equalization error in the receiver to adapt coefficients of the echo canceler. However, Banerjea does not disclose or suggest that the transmit signal is filtered in response to the receiver bandwidth so that the reference transmit signal has the receiver bandwidth. Therefore, Banerjea does not disclose or suggest "creating a digitized reference transmit signal of the transmit signal, the digitized reference transmit signal having the receiver bandwidth," as recited by amended Claim 10.

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For at least the foregoing reasons, Applicant submits that amended Claim 10 includes limitations which are not disclosed or suggested by Banerjea. Therefore, Applicant submits that Claim 10 is not anticipated by Banerjea. Applicant respectfully requests that the Examiner withdraw the rejection of Claim 10 and pass Claim 10 to allowance.

**Claim 11**

Claim 11 depends from amended Claim 10. As such, Claim 11 includes all the limitations of amended Claim 10, as well as recites further limitations of particular utility. Therefore, for the above stated reasons with regard to Claim 10, Applicant submits that Claim 11 is patentably distinguished over Banerjea. Applicant respectfully requests that the Examiner withdraw the rejection of Claim 11 and pass Claim 11 to allowance.

**Response to Rejection of Claims 5-7 Under 35 U.S.C. § 103(a)**

In the August 23, 2005 Office Action, the Examiner rejects Claims 5-7 under 35 U.S.C. § 103(a) as being unpatentable over Kenworthy. Each of Claims 5-7 depends from amended Claim 1. As such, each of Claims 5-7 includes all the limitations of amended Claim 1, as well as recites further limitations of particular utility. Therefore, for at least the reasons stated above with regard to amended Claim 1, Applicant submits that each of Claims 5-7 are patentably distinguished over Kenworthy. Applicant respectfully requests that the Examiner withdraw the rejections of Claims 5-7 and pass Claims 5-7 to allowance.

**Response to Rejection of Claim 8 Under 35 U.S.C. § 103(a)**

In the August 23, 2005 Office Action, the Examiner rejects Claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Kenworthy in view of U.S. Patent No. 5,396,571 issued to Yedid et al. ("Yedid"). Applicant submits that Yedid does not disclose or suggest the limitations of amended Claim 1 which are not disclosed or suggested by Kenworthy. Therefore, amended Claim 1 is patentably distinguished over Kenworthy in view of Yedid.

Claim 8 depends from amended Claim 1. As such, Claim 8 includes all the limitations of amended Claim 1, as well as recites further limitations of particular utility. Therefore, for at least the reasons stated above with regard to amended Claim 1, Applicant submits that Claim 8 is patentably distinguished over Kenworthy in view of Yedid. Applicant respectfully requests that the Examiner withdraw the rejection of Claim 8 and pass Claim 8 to allowance.

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### Summary

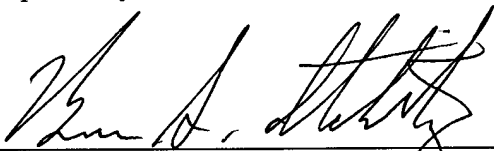
In view of the foregoing remarks, Applicant respectfully submits that Claims 1-12 are in condition for allowance, and Applicant respectfully requests allowance of Claims 1-12.

If there is any further impediment to the prompt allowance of this application, or if the Examiner has any questions at all regarding the present application, the Examiner is respectfully invited to call Applicant's representative, Bruce S. Itchkawitz, at 949-721-2924 or at the telephone number listed below.

Please charge any additional fees, including any fees for additional extensions of time, or credit overpayment to Deposit Account No. 11-1410.

Respectfully submitted,

Dated: 10/26/05

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